

## Spirometry



Allows to evaluate respiratory volumes and to detect respiratory deficiencies.

### Principle

Spirometry is an exam exclusively aerodynamic.

The patient must produce two or three cycles of deep respiration..



It may be necessary to use a « nose-pincher » to avoid air leakage through the nasal ways.

## Preparation

### Equipment

- Choose an oral mask that will fit well with the subject face.
- Plug the mask on the mouthpiece.



Do not stretch too much the mask to avoid spitting the synthetic material.

### Software

Launch the SESANE software by clicking this icon in Windows task bar.



in SESANE, enter the patient information :



Patient Informations

Double click on this icon :



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## Preparation

- Prepare the mouthpiece
- Enter the patient information
- start the program

*the main window appears.*

- ① Create a new document

Move away the patient from the mouthpiece

- ② Start real time display

*The record control window appears.*

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## Settings

- ③ Calibrate the aerodynamic sensors. Wait three seconds.

*The airflow level must be at zero*



Replace the patient in position.

Verify that the patient is correctly pressed against the mask,

While the patient is breathing, check the airtightness of the mask.

- ④ Start recording.

*The patient breathes deeply at least three times.*

- ⑤ Stop recording

*Main window appears*

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## Measurement

Two cursors are placed automatically at each side of an exhaling cycle. The results appear in a recapitulative chart.

- ⑥ Zoom if necessary.

if necessary :

- ⑦ Replace the beginning of cycle cursor.

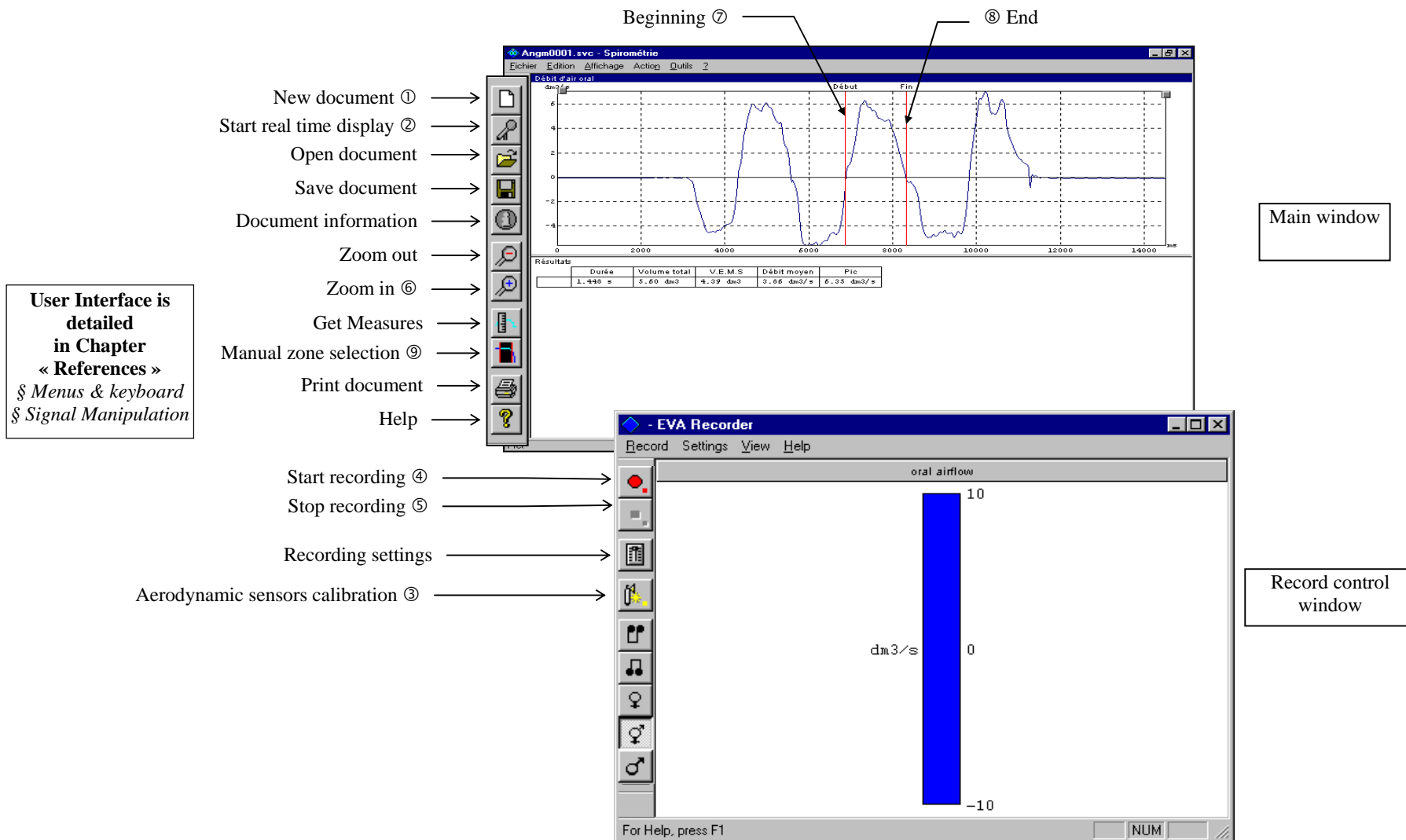
- ⑧ Replace the end of cycle cursor

- ⑨ It is possible to select manually the analysis zone:

- select a zone (place the mouse pointer at the beginning, press and hold down the Shift key and left mouse button as well, move the mouse to the end, release)
- push down the icon ⑨

- Save data
- print data
- remove and clean mask

- 👉 Do not stretch too much the mask to avoid splitting the synthetic material.



## Measurement

Measurements are performed using two cursors defining the beginning and the end of a breathing cycle.

### Creating and moving the observation cursors

Cursors defining the sentence appear automatically. Place the left cursor at the beginning of the sentence :

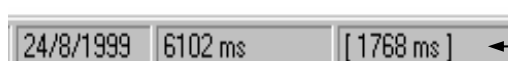
1. move the mouse pointer near the cursor,
2. click and hold down the left mouse button.
3. drag the mouse pointer at start of the signal.
4. release

Place the right cursor at the end of the sentence, using the same procedure.


One can also define manually an observation zone :

1. Create a selection zone (place the mouse cursor at the beginning, hold down the left mouse button, and the shift key at the same time, drag the mouse at the end of the selection, release)

You can control the selection duration by looking the program state bar :



Selection duration

2. click on the  icon  
or select the menu « Action / Manual selection »  
or use the « S » keyboard shortcut

### Moving the observation cursors

You can move these cursors if necessary.

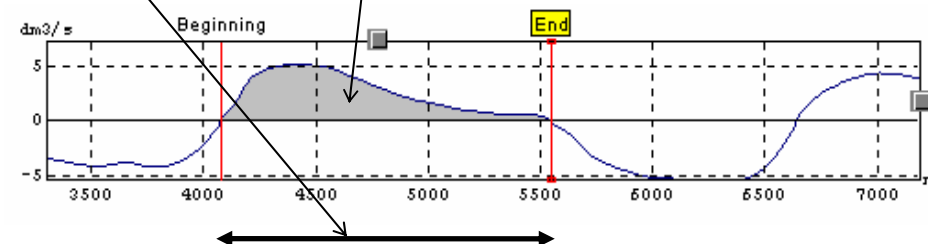
To do so,

- place the mouse pointer near the cursor
- click and hold down the left mouse button
- move the mouse where you want
- release the left button

### Results

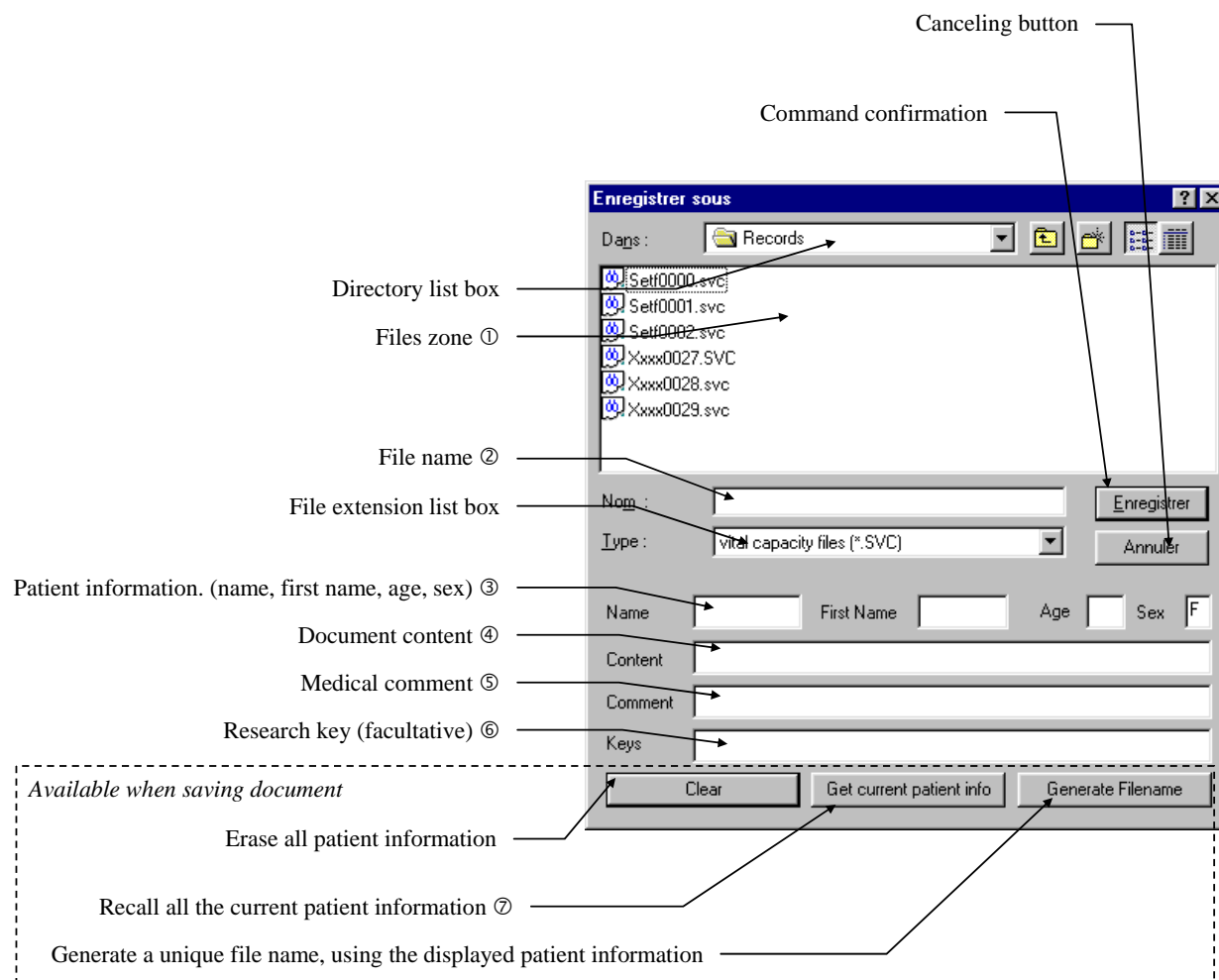
When the cursor placement is done, the results appear in an array :

duration between cursors	Volume between cursors	Volume exhaled on one second	Mean airflow rate
1.468 s	3.94 dm <sup>3</sup>	3.55 dm <sup>3</sup>	2.69 dm <sup>3</sup> /s



$$\text{Quotient Phonatoire}(\text{dm}^3 / \text{s}) = \frac{\text{Volume Expiratoire}(\text{dm}^3)}{\text{Temps Maximal de Phonation}(\text{s})}$$

## Data Management



### Save a document

Method 1 : Click on ⑦. The current patient information appear in the fields ③, ④, ⑤, ⑥. A unique filename is automatically generated in ②. Confirm by clicking on ⑨.

Method 2 : Enter manually the patient information in the fields ③, ④, ⑤, ⑥. Click on ⑧. A unique filename appears in ②. Confirm the saving by clicking on ⑨.

Method 3 : Enter manually the patient information in the fields ③, ④, ⑤, ⑥. Enter a file name in ①. Confirm the saving by clicking on ⑨.



### Open a document

Select a document in ① by a single click with the left mouse button.. The file name appears in ② with its information as well in ③, ④, ⑤ ⑥. Confirm your choice by clicking on ⑨.



### To obtain information about the current document